Notes on genus *Eurydoxa* Filipjev (Lepidoptera: Tortricidae) in China

BYUN Bong-Kyu[1], YAN Shan-chun[2], LI Cheng-de[2]
[1] *Korea National Arboretum, Prov. Gyeonggi, 487-821, Korea*
[2]*Northeast Forestry University, Harbin, 150040, P.R. China*

Abstract: Genus *Eurydoxa* Filipjev in China is reviewed and noted for the first time. Based on the present study, two species are recognized, including *rhodopa* Diakonoff and *advena* Filipjev. All available information for the species is reviewed and provided.
Key words: Systematics, Lepidoptera, Tortricidae, *Eurydoxa*, China.
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Introduction

Tribe Ceracini of the family Tortricidae, in which a total of 24 species under four genera (*Pentacitrotus* Butler, *Eurydoxa* Filipjev, *Cerace* Walker, and *Bathypluta* Diakonoff) has been known to date from the world (Kawabe 1991). Of which, the genus *Eurydoxa* Filipjev has only five species in the world.

Even two species, *E. rhodopa* Diakonoff and *E. advena* Filipjev, were included in Kawabe (1991) as it to be distributed in China, no species was mentioned in Liu and Li (2002), which was recently published for the Chinese fauna of the family due to the absence of available material evidence. In the present study, the authors reviewed the genus *Eurydoxa* Filipjev of China for the first time based on the specimens, which have been preserved in the collection of Northeast Forestry University, Harbin, China. Also the previous literatures were reviewed and discussed.

Systematic accounts

Genus *Eurydoxa* Filipjev

Eurydoxa Filipjev, 1930, Dokl. Akad. Nauk SSSR (A): 373-374, figs. 1-3 (Type species: *Eurydoxa advena* Filipjev, 1930).

Ceraceopsis Matsumura, 1930, 6000 Illust. Insects Japan-Empire: 1068 (Type species: *Ceraceopsis sapporensis* Matsumura, 1931).

Labial palpus rather short. Forewing elongate-truncate slightly arched near apex; apex rather rounded, short; termen rather oblong, without costal fold in male. Vein R_4 to termen beyond apex, anal veins bifurcated 1/4. In hindwing, Cu1a distinctly separated from M_3. In male genitalia, sacculus with short free termination; transtillae ill-defined; aedeagus fairly long, strongly curved, strongly sclerotized, with a lateral minute projection near apex, cornuti absent in vesica. Female genitalia characterized by a long and well sclerotized ostium bursae, and a round signum with numerous minute dents around it at corpus bursae.

Five species, *E. rhodopa* Diakonoff, *E. advena* Filipjev, *E. ussuriensis* (Kuznetsov), *E. mesoclasta* (Meyrick), and *E. indigena* Yasuda, have been recorded in the world to date. Its distributional range is restricted from Northeast Asia, including Russian Far East and Japan, to South Asia.

Eurydoxa rhodopa Diakonoff

Eurydoxa rhodopa Diakonoff, 1950, Bull. Br. Mus. Nat. Hist. (Ent.), 1: 184-186, fig. 9; Kawabe, 1991, J. Nat. Hist. Japan, 1: 3, fig. 1.

Wingspan 29 mm in female. Adult is as shown in Kawabe (1991).

Material examined. China: 1♀, Tsekou, 1898, P. Dubernard, "Paravicini Collection, B.M. 1937-383" "B.M. genitalia slide no. 2704"-coll. B.M.

Distribution. China (endemic).

Remarks. Diakonoff (1950) described the present species designated above female specimen collected from China as holytype, which is now preserved in the collection of B.M. (The Natural History Museum, London, U.K.). Since the designated holotype of the species had been collected in 1898, the exact locality for "Tsekou" is now uncertain. We assume that it is a part of the Province Hainan, southern China.

Eurydoxa advena Filipjev (Figs. 1-4)

Eurydoxa advena Filipjev, 1930, Dokl. Akad. Nauk SSSR (A): 374, figs. 1-3; Yasuda, 1975, Bull. Univ. Osaka Prefect. (B) 27: 80; Kawabe, 1982, Moths of Japan, 1: 63, 2: 158, pl. 14: 1-3; Kawabe, 1991, J. Nat. Hist. Japan, 1: 3, figs 12, 13.

Ceraceopsis sapporensis Matsumura, 1931, 6000 Illust. Insects Japan: 1068, no. 2129.

Ceraceopsis ussuriensis Kuznetsov, 1956, Trans. Far-Eastern Branch Acad. Sci. USSR. 3(6): 237, figs. 1-6.

Adults. *Male* (Fig. 1): Wingspan 33 mm. Head dark brown, except for a narrow black edge around eyes. Antennae

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Biography: *BYUN Bong-Kyu (1963-), male, Ph.D., Researcher, the Korea National Arboretum, Korea, e-mail: bkbyun@foa go.kr
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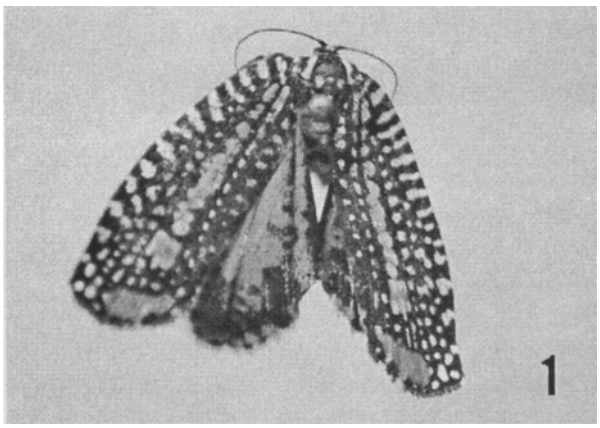
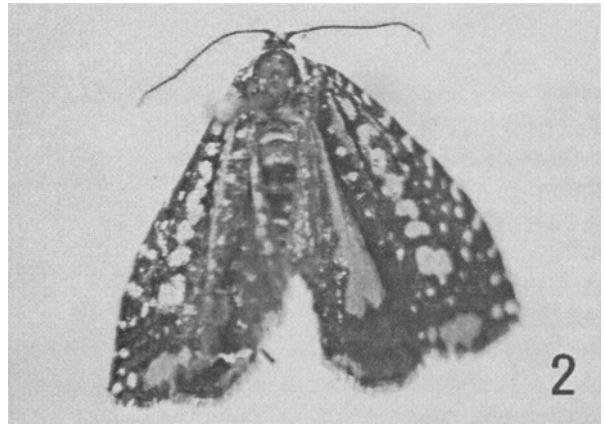
dark, blackish brown, rather short, not reaching half of costa of forewing. Collar pale yellow, edged with brownish black dorsally. Thorax dark black, with pale yellow scales dorso-laterally. Abdomen blackish brown, pale yellow ventrally, segments with slender band at each edge in same color posteriorly. Forewing dark brownish black, with numerous pale yellow markings; a series of oblique irregular transverse streaks along the costa, rather tiny near base and apex, except those of middle which is rather larger and distinct near middle; somewhat small elongate dots scattered above cell; rather bigger and pale yellow spots along the below margin of the cell, reaching to 3/4 of the wing with a biggest spot of them at end, which is different that of Japanese specimen, followed by an elongate bright orange patch near tornus at termen; two tiny small, semi-ovate pale yellow dots along termen near middle with a small spot below of it in same color; another series of transverse streak consisting several small pale yellow dots developed below of it, followed by a series of several tiny dots near base along dorsum. Cilia grayish black with somewhat pale yellow dots apically. Hindwing dark brownish-black, rather darker beyond cell towards apex. Markings bright orange, rather distinct, covering cell broadly, concave beyond middle and near termination respectively; a narrow streak along the termen, below half, with a small spot at middle of it, followed by a very short, slender line near tonus in same color; a somewhat distinctly developed streak along the anal vein. Cilia bright orange.





Figs. 1-2: Adults of *Eurydoxa advena* Filipjev: 1, male; 2, female.

Female (Fig. 2): Wingspan 38 mm. Head black, vertex pale yellow. Antenna black, rather darker at scape, fairly short, reaching to 1/3 of costa of forewing. Collar pale yellow, except for dorsal summit black. Thorax black, with pale yellow longitudinal lines at each lateal side. Abdomen blackish brown, segments yellowish at each margin posteriorly. Forewing black with pale yellow markings; apex rather rounded with a pale yellow spot; a series of short longitudinal bands developed along the costal margin to middle, then several spots scattered towards apex; another series of orange spots lies along the middle of cell towards termen, followed by two rows above it near apex; a row developed along the below margin of cell, with a very distinct, bigger spots, followed by two rows of spots below of it; a distinct bright orange patch presents from near middle of termen towards tornus, slightly concaved between termen and tornus. Cilia black, short. Hindwing black, markings orange; a narrow streak developed along termen near apex, rather broader beyond half towards tornus mixed with two spots within it; a broad orange streak developed, covering nearly 2/3 of hindwing, irregularly concaved at marginal line towards termen. Cilia pale orange.

Male genitalia (Fig. 3). Tegumen short, broad. Uncus moderate, rounded apically with numerous short bristles ventrally. Gnathos arms rather short, hook-shape, well sclerotized, sharply curved terminally. Socius fairly broad, rather narrower at base. Valva somewhat elongated towards apex, costa well sclerotized, with long, dense bristles terminally, forming a distinct patch covering about dorsal half of the internal surface of valva. Sacculus rather thick, with short bristled along the ventral margin to apex, well sclerotized; a distinct dent developed at apex, triangular shape in outline. Juxta well sclerotized, broad; anellus strong; transtilla ill-defined. Aedeagus slender, fairly long curved medially, well sclerotized, somewhat rounded terminally, with a lateral dent near apex, very strongly developed.

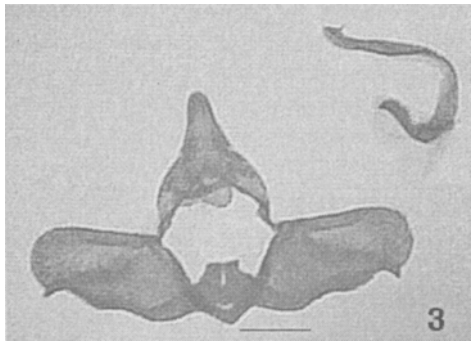
Female genitalia (Fig 4). Sterigma with a rounded dilation at middle. Ostium bursae a strong tube-like, fairly broad at entrance, rather long, well sclerotized, abruptly curved near ductus bursae. Ductus seminalis originated from end of antrum. Ductus bursae fairly long, narrow, rather broader near corpus bursae. Corpus bursae somewhat potato-shaped, with a rounded signum with numerous dents around it.

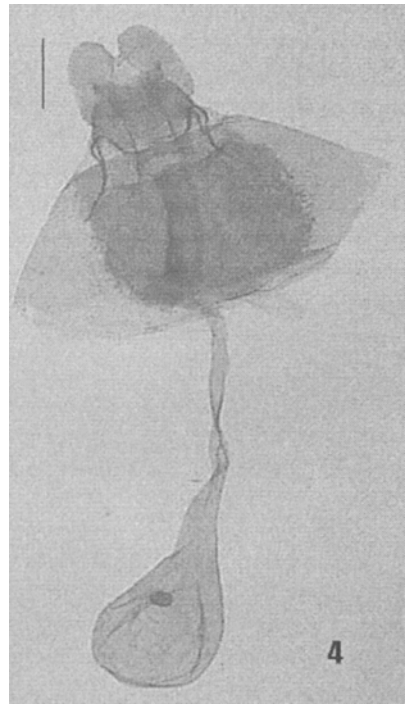
Material examined. 1 ♂, 1 ♀, Liangshui, Province Heilongjiang, 14 July 1996, SC Yan-Genitalia Slide Number: NEFU-02-015 (♂) and 016 (♀).

Flight period. Mid-July in Heilongjiang Province. The species can be attracted by light trap.

Distribution. China (Sichuan, Heilongjiang), Russia (Ussuri, Sakhalin), and Japan (Hokkaido, Honshu).

Host plants. Picea jezoensis Carr., *Abies veitchii* Lindl., and *Abies sachalinensis* Masters. (Yasuda, 1975).





Figs. 3-4: Genitalia of *Eurydoxa advena* Filipjev: 3, male; 4, female. <scale bars: 1 mm>

Remarks. Even Chinese specimens show some variations in wing patterns of both sexes, genitalic characteristics agree with the nominate species. Yasuda (1975) described the larva of the species in detail as follows: "Head brownish yellow, pattern distinct, brown or dark brown; ocellar area with dark pigments. Thoracic shield brownish yellow. Anal shield of the body color. Body pale. Pinnacula moderately small, of pale brown color. Anal fork well developed". Kawabe (1991) listed the present species as it to be distributed in Sichuan, China. According to Kawabe (1982), it has been outbreaked in Yezo spruce forest, in Hokkaido in 1956". Recently it was designated as a rare species in the area of Russian Far East.

Biology. It has been known that there is a single generation a year in Japan. The moths appear from late July to mid August. Larvae of the early instars feed on in the young needles for a short time and then they find suitable places among the needles to spin protective coverings in which they hibernate. The larvae become active in the spring. Later, they tie the tips of several twigs together to form a nest and feed on. The fully grown larvae spin loose cocoons either in the nest or on a twigs and pupate in them. When mature, larvae are almost 28 mm long.

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